5.0 ENVIRONMENTAL CONSEQUENCES

The environmental consequences of the Selected Alternative and the No-Build Alternative are compared in this chapter. The Selected Alternative, as described in Section 2.1, is comprised of Alternatives 1B, 2B, 3A, 4A, 5A, and 6B. The discussion of mitigation measures for potential adverse consequences is found in Chapter 6.

The following list summarizes the principal issues of concern for I-49 South:

- Relocation of residences, commercial buildings and businesses, and utilities.
- Environmental Justice.
- Aquatic Ecology, especially during construction.
- Wetlands.
- Floodplains.
- Levees.
- Protected Species.
- Hazardous sites.
- Utilities.
- Visual Quality.

5.1 Land Use

This section reviews potential changes in the land use patterns along the ROW. Potential impacts through relocation are discussed in Section 5.2.2.

5.1.1 No-Build Alternative

The No-Build Alternative would not change the present development pattern of urbanized land use categories in the corridor.

5.1.2 Selected Alternative

The construction of an interchange at LA 182 could result in the conversion of agricultural land to commercial properties in the vicinity of the existing commercial development at the intersection of US 90 and LA 182. As development already is occurring, it would be expected to accelerate as a result of improved access.

In the Dufrene Ponds area, the Selected Alternative would have minimal impact on current land use trends as there is a small amount of land available for development that is accessed from US 90 and that would remain accessible from the US 90 interchange. In rural St. Charles Parish, the Selected Alternative traverses the Paradis Mitigation Bank, which restricts the potential for urban development although some development could occur near the LA 635 interchange on the opposite side of US 90.

As the Selected Alternative crosses US 90 near Mosella, it would convert some residential uses to a transportation use, but it is not anticipated to alter the general land use patterns in urbanized St. Charles Parish. The interchange with LA 3127 would be located in an area of potential wetlands. As LA 3127 would cease to be a freeway, private land owners could seek permits for development. Control of Access (COA) limits would restrict development to the west, but on the east between the I-49 and the I-310 interchanges development could occur if a 404 Permit were obtained.

Future development at the intersection of LA 3127 and US 90 would not vary the existing pattern and also would be restricted by COA.

In Boutte between LA 3127 and the Monsanto property, some residential and commercial properties would be relocated. The removal of these properties does not divide the area because these properties are on the edge of the neighborhood and adjacent to the BNSF Railroad ROW.

Through much of urbanized St. Charles Parish, the Selected Alternative would be constructed on the Monsanto property and would have no effect on land use. Any development associated with I-49 between Willowdale Boulevard and the Davis Pond Diversion Canal, like the area adjacent to LA 3127, would require a 404 Permit.

The Selected Alternative would not change the existing land use patterns east of the Canal in St. Charles or Jefferson Parishes because I-49 would follow the existing US 90 and US 90 Business alignments that are already developed as urban areas or restricted by their wetland characteristics.

5.1.3 Section 4(f) or Section 6(f) Properties

No properties that meet the criteria for Section 4(f) of the Department of Transportation Act or that received funding under Section 6(f) of the Land and Water Conservation Fund Act are found in the ROW. However, two properties that meet the criteria for Section 4(f), Bayou Segnette State Park and Catfish Bourgeois Playground, abut the ROW. The project would not require ROW from the parks or affect the intended use or function of either one. Bayou Segnette State Park is a large regional park that provides outdoor recreation at a distance from the ROW in a location buffered by an extensive forested area. The Alario Center, a major indoor recreation and meeting facility, is also located within Bayou Segnette State Park. No proximity impacts on the parks would occur as a result of the project.

At present the abutting at-grade roadways of the Westbank Expressway (US 90 Business) have ADT in excess of 60,000 vehicles. In the Build case, the ADT of these roadways would be less than 16,000 vehicles as the majority of the traffic in the corridor would be on the elevated mainline of I-49. Traffic-related noise would be reduced, thereby having a positive effect on the parks.

The separation of through traffic from local traffic would make access to Catfish Bourgeois Playground, a neighborhood facility, safer, especially for pedestrian and bicycle access. Access to both parks would not otherwise be affected. For the foregoing reasons, the Preferred Alternative would require no direct or constructive use of Section 4(f) properties and would not substantially diminish the activities, features, or attributes of these properties.

5.2 Community Environment

5.2.1 Demographics

The No-Build Alternative would have no effect on existing demographic conditions while the Selected Alternative would support the continued growth of the study area.

5.2.2 Relocation

This estimate of relocations is based exclusively on conclusions made from review of aerial photography, field reconnaissance, and meetings with impacted residents.

The Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act of 1970) provides important protections and assistance for people affected by federally funded projects. Relocation resources are available to all residential and business relocates without discrimination. If necessary, DOTD will provide housing of last resort to residential displacements. Housing of last resort may involve the use of other methods of providing comparable decent, safe, and sanitary housing within a person's financial means. The Uniform Act of 1970 allows flexibility in the use of housing of last resort and is intended to enable agencies to respond to difficult or special displacements.

5.2.2.1 No-Build Alternative

As no ROW acquisition would be required under the No-Build Alternative, no relocation impacts are anticipated.

5.2.2.2 Selected Alternative

Potential relocations associated with the Selected Alternative are listed in **Table 5-1**. A total of 15 residential relocations, 12 business relocations, and 11 other impacts would occur to implement the Selected Alternative. In addition, there are pipelines, rail lines, and drainage structures on the Monsanto property that would be defined and relocated in accord with a study to be performed during project design.

In addition to the impacts listed below, other developed properties may be impacted by control of access in various locations as summarized in **Table 5-2** and shown on the Atlas Plates in Chapter 2.

Table 5-1
Selected Alternative – Potential Relocations and Other Impacts

Link	Residences	Businesses	Other	Totals
1	0	0	0	**0**
2	0	0	0	**0**
3	13	1	3 farm building within Paradis Mitigation Bank property, 2 vacant commercial buildings	**19**
4	0	3	1 pipeline lift station, 1 parking lot reduction	**5**
5	2	8	2 parking lot reductions, one commercial and one residential 1 vacant container terminal and junkyard;	**13**
6	0	0	1 parking lot reduction	**1**
Totals	**15**	**12**	**11**	**38**

Table 5-2
Selected Alternative – Potential Control of Access Impacts

Link	Location	Developed	Vacant
1	Station 200+00		Area along LA 182 at intersection with entrance and exit ramps & on US 90 at LA 182
2	N/A		
3	Station 770+00		Area along extension of LA 635 and its intersection with exit and entrance ramps
	Station 970+00		Area divided by interstate to interstate ramp from southbound I-310 to southbound I-49
	Intersection US 90 and LA 3127	Boutte Mini-Storage	
4	Station 1220+00		On southbound frontage road intersection with Willowdale Boulevard
5	Station 1580+00	Durr Heavy Equipment	On frontage roads between Glenndella and Dexter
	Station 1620+00	Avondale Truckstop Casino; Amoco Service Station	On frontage roads east of Avondale Garden Road
	Station 1680+00		On frontage roads intersection with Lapalco Boulevard
	Station 1720+00		On frontage roads near ramp terminals to and from US 90
	Station 1770+00		
6	Station 1780+00		On southbound frontage road east of Segnette Boulevard
	Station 1870+00 to 1885+00	A-Mar Interiors; Westover Apartments; Prime Industrial equipment; Sonic; Direct General; Expressway Pawn; Reformer Church; Express Mart; Sunbeam Discount Store; Holiday Fashion; Dynamic Physical Therapy; JIA; Oneway Payday	
	Station 1935+00	Westbank car Wash; Auto Zone; Shell Service Station; residential side yards	

5.2.3 Environmental Justice

An analysis of the potential impact on minority and low-income communities was performed in accord with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.*

5.2.3.1 Executive Order 12898

EO 12898 specifies actions to be taken on a range of issues that are intended to promote nondiscrimination in federal actions, to provide minority and low-income communities equal access to public information regarding a federal action, and to provide an opportunity for public participation in the evaluation of a federal action in matters relating to human health and the environment. In particular, it stipulates that:

> "To the greatest extent practicable and permitted by law…each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low income populations…" (EO 12898 Section I101)
>
> "Each Federal Agency shall conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons…from participation in, denying persons the benefits of, or subject persons…to discriminations under such programs, policies, and activities, because of their race, color, or national origin" (EO 12898 Section 2-2).

To comply with EO 12898 two questions are answered using the US Census:

- Does the potentially affected community include qualifying minority and/or low income populations?
- Are the environmental impacts likely to fall disproportionately on these qualifying populations and tribal resources?

No tribal resources are known to exist within the study area.

Table 5-3A presents the demographics and poverty status of the affected Census Tracts in Lafourche and St. Charles Parishes, and **Table 5-3B** presents the same data for the affected Census Defined Places (CDP) in Jefferson Parish. **Exhibits 4-3 and 4-4** show the locations of these data units.

As indicated in the tables, qualifying low-income populations are found in Census Tracts 628 and 632 in St. Charles Parish and in all CDPs in the study area in Jefferson Parish. In each case, the qualifying community is made up of an equal or greater percentage of low-income population than the respective Parish.

5.2.3.2 Project Effect Discussion

The development and refinement of alternatives was conducted with an extensive public involvement process that was inclusive and accommodating of the entire potentially affected community. Information received from the public and regulatory agencies played an important role in shaping and refining the alternatives, and ultimately in determining the Selected Alternative.

Briefly, early alternatives that utilized the US 90 ROW to the maximum extent possible met with overwhelming opposition in St. Charles Parish because of impacts to established businesses. Other alternatives that were routed south of developed areas met with objection from regulatory agencies due to wetlands and natural resource impacts. Alternatives that minimized impacts to both businesses and natural

resources resulted in impacts to minority communities. Alternative 3B was developed in an effort to reduce impacts to minority communities, but it did not have the least impact on wetlands and, therefore, did not meet the test of being the least damaging, yet practicable alternative.

The public involvement process was supplemented with special outreach to affected minority communities discussed in Chapter 7, especially **Table 7-5**. The provisions of EO 12898 have been and will continue to be followed through the conclusion of this NEPA process.

5.2.3.2.1 No-Build Alternative

The No-Build Alternative would involve no new construction activity. No impact on minority or low-income communities or tribal resources would occur.

Table 5-3A
Minority and Low-Income Data
By Census Tract - Lafourche and St. Charles Parishes, 2000

Area or Tract	Total Population	Percent Minority	Minority Population	Percent Below Poverty Line	Population Living Below Poverty Line
Louisiana Total	**4,468,976**	**36.1%**	**1,612,815**	**19.6%**	**851,113**
Lafourche Total	**89,974**	**17.1%**	**15,430**	**16.5%**	**14,560**
St. Charles Total	**48,072**	**17.6%**	**13,269**	**11.4%**	**5,424**
210	2,903	13.1%	380	13.5%	391
628	4,027	63.2%	2,547	26.8%	1,081
629	2,725	14.4%	393	10.7%	280
632	5,424	10.4%	562	11.6%	625

Source: 2000 US Census.

Table 5-3B
Minority and Low-Income Data
By Census Defined Place (CDP) - Jefferson Parish, 2000

CDP	Total Population	Percent Minority	Minority Population	Percent Below Poverty Line	Population Living Below Poverty Line
Louisiana Total	**4,468,976**	**36.1%**	**1,612,815**	**19.6%**	**851,113**
Jefferson Total	**455,466**	**34.6%**	**157,404**	**14.0%**	**63,765**
Waggaman	9,435	60.3%	5,686	18.0%	1,698
Avondale	5,441	38.8%	2,113	17.3%	941
Bridge City	8,323	57.4%	4,777	32.0%	2,663
City of Westwego	10,763	27.1%	2,917	20.9%	2,249
Marrero in study area	15,176	76.1%	11,707	22.4%	3,399

Source: 2000 US Census.

5.2.3.2.2 Selected Alternative

The Selected Alternative has been aligned to provide service benefits to all affected communities along the corridor, regardless of demographics or income. As discussed in 5.2.3.2, the public involvement program has been implemented to inform all potentially affected parties, establish a dialogue, and develop workable and reasonable design solutions.

In St. Charles Parish, the Boutte neighborhood in Census Tract 628 meets the definition of a minority and low income neighborhood. Unavoidable residential takings are anticipated. As a mitigation strategy, an entire family occupying an estimated seven residences will be relocated although two of the residences are not within the additional required ROW. As the alignment is on the edge of the neighborhood adjacent to a railroad, impacts other than relocations should be minimal. The alignment crosses this neighborhood because to go further north would violate the safety buffer surrounding the Monsanto chemical plant and to go further south would cause more takings of both commercial and residential properties or would impact wetlands. Alignments through the wetlands are not the least damaging, yet practicable alternatives.

On Pit Road, also in Census Tract 628, two relocations of minority households would be unavoidable. The homes are located on a large property owned jointly by members of a family. Coordination with the family during design would be able to satisfactorily relocate the homes elsewhere on their property.

For the same reasons described for the Boutte residents above, the Selected Alternative would require relocation of four to six residences affecting qualifying populations in Mosella. In Jefferson Parish, two residential relocations affecting a qualifying minority population are expected in Avondale.

Throughout the alternatives development and analysis there was a focus on avoiding or at least minimizing impacts to the natural and built environments. Substantial community involvement was a key part of that effort. The Selected Alternative represents a balance by meeting the project Purpose and Need while striving to avoid or minimize natural environment impacts as much as possible and minimizing community impacts. The populations that would be displaced and relocated by the project are representative of the affected community in the I-49 South study area as a whole. It is anticipated that suitable housing can be found within the local area to accommodate those that would be relocated by the project. The DOTD relocation assistance policy and the agency's obligation to conform to the Uniform Act of 1970, require that all impacted businesses and residents, irrespective of ethnic background or income level, be provided assistance in accord with the law. As a consequence, no disproportionate impact on qualifying environmental justice communities will occur.

5.2.4 Community Facilities

The following discussion does not apply to pedestrian and bicycle facilities, which are addressed in Section 5.2.5.

5.2.4.1 No-Build Alternative

The No-Build Alternative will involve no change in the location of any existing community facility. Facilities that are transportation dependent, however, such as emergency services and transportation resources serving schools, senior centers and other public facilities, would be affected by the gradual deterioration in the available capacity of the existing roadway network.

5.2.4.2 Selected Alternative

A short portion of US 90 would be eliminated in Lafourche Parish to provide a

connection of I-49 with the existing US 90 crossing of Bayou Lafourche. From there, existing US 90 would continue to provide local access to the remainder of the study area. Today the Bayou Lafourche Marine Institute and the Lafourche Parish Sheriff's Office Work Release Program on US 90 have direct access from LA 1 and LA 308. Construction of I-49 would route trips to these facilities on I-49 to the LA 182 interchange or on LA 182 and from there onto US 90.

In St. Charles Parish, the old Mt. Airy Cemetery on Alexander Street in Boutte is adjacent to the ROW, but would not be directly impacted.

In Jefferson Parish, the Pops Stroman Memorial Park, a rest area within the existing highway ROW at the intersection of US 90 and US 90 Business, would be removed to construct the Selected Alternative. As this rest area was created by DOTD as a transportation facility, any recreational use is incidental or secondary to its major purpose. It is not a 4(f) property.

5.2.5 Pedestrian and Bicycle Facilities Considerations

The No-Build Alternative and the Selected Alternative would have no effect on pedestrian or bicycle facilities in the study area.

5.2.6 Community Disruption

The No-Build and Selected Alternatives would result in no community disruption as with the former no alteration of existing highway access or community connectivity would occur, and with the latter the current patterns of access and connectivity would remain.

5.2.7 Neighborhood Cohesion

Cohesion is the social and spatial interrelationship among persons or groups at the neighborhood level in a community.

5.2.7.1 No-Build Alternative

The No-Build Alternative would not affect neighborhood cohesion as no social or spatial neighborhood relationships would be altered from the existing condition.

5.2.7.2 Selected Alternative

The Selected Alternative would maintain neighborhood cohesion by remaining within the US 90 ROW to the maximum extent possible. Further, it is expected to improve access to schools, shops, and services once construction is complete.

Where new ROW is required, efforts have been made through public involvement to minimize neighborhood impacts, but there would be unavoidable residential relocations. In Boutte, the relocations would occur on the edge of the neighborhood adjacent to a railroad ROW and adjacent to the Pit, a manmade waterbody. In Mosella, residences would be removed on LA 631.

The mainline in all areas would be sufficiently elevated that no barrier would exist to movements across the ROW. Noise could be perceptible at nearby residences in all three cases.

5.2.8 Economic Impact

Economic impacts to businesses that may occur after construction are discussed here. The terminology used in this discussion includes the following:

- *Traffic-serving businesses* are those businesses that generally receive a considerable amount of business from the traveling public (i.e. gasoline service stations, eating and drinking establishments, and motels/hotels/other temporary lodging places).
- *Non-traffic-serving businesses* are all other retail trade and service industry businesses.
- *Displaced businesses* are those businesses which will have enough land and buildings taken for new ROW to completely remove them from their present location. Displaced businesses that choose to relocate in the project area would be considered "*new businesses.*"
- *Partially displaced businesses* are those businesses that would have some property taken for ROW, but could continue to operate at the same location.
- *Abutting businesses* are those businesses located on a proposed route that would abut the proposed improved facility during and after construction, where construction activity would occur in front of the property.
- *Remaining businesses* are those businesses located on an existing route that would abut the proposed improved facility during and after the construction, but have limited construction activity in front of their property.
- *Bypassed businesses* are those businesses on existing US 90 that would be completely bypassed by the Selected Alternative.
- *Closed businesses* are those businesses that either closed before construction or closed during and remained closed after construction.

At this time, it is only possible to discuss the relative impacts that could be anticipated between Traffic-serving businesses and Non-traffic-serving businesses.

5.2.8.1 No-Build Alternative

The No-Build Alternative would result in no change in the existing businesses abutting US 90. Under the No-Build alternative, however, both Traffic-serving and Non-traffic-serving businesses may be affected by the gradual deterioration of the capacity of the existing roadway network.

5.2.8.2 Selected Alternative

It is estimated that there are 73 Traffic-serving businesses and 120 Non-traffic-serving businesses abutting US 90. Both types of businesses potentially may be impacted by the Selected Alternative in terms of partial or entire displacements, closings, remaining businesses, or bypassed businesses.

The three types of impacts to businesses abutting a ROW include:

1. Loss of property due to acquisition of ROW,
2. Interruption of access due to construction activities, and
3. Changes in traffic volumes and patterns after the construction.

Impacts from changes in traffic depend upon the percentage of business revenues derived from a regular clientele compared to customers traveling through the area.

Traffic-serving businesses that are dependent on customers traveling through the area would be impacted in relation to their proximity and visibility from an interchange. It would not be anticipated that other businesses would be adversely impacted.

5.2.9 Land Development and Property Value in Area

5.2.9.1 No-Build Alternative

The No-Build Alternative would not change the general pattern of development in the corridor. The rate of growth and property values would be constrained over time as congestion increases on the existing roadway network.

5.2.9.2 Selected Alternative

Table 5-4 presents a summary of typical ranges of estimated change in property values for different land uses based on national historical literature. These estimates were not developed for the I-49 South project. The change in value for a single property can be affected by several factors, including, for example, distance from an interchange, distance between interchanges, ease of access, and property size.

Examination of this data indicates a positive trend for all non-residential uses and a mean benefit for residential land use. Using this data, it is anticipated that property values in general, throughout the study area, would be positively affected by construction of I-49 South.

Table 5-4
Estimated Changes in Property Values

Land Use	Percentage Change			
	Upgrading an Existing Highway System		Bypassing an Existing Highway System	
	Range	Mean	Range	Mean
Commercial/Industrial	+15 to +100	+57	+12 to +47	+30
Residential	-56 to +73	+11	+9 to +35	+22
Public/Nonprofit	0 to +202	+29	+10 to +26	+20
Vacant Land	+35 to +392	+180	+72 to +384	+276

Note: Estimates shown are not specific to I-49 South.
Source: Economic Assessment of the Proposed Improvement of U.S. Highway 287 in Wichita Falls, TX.

5.2.10 Consistency with State and Local Plans

5.2.10.1 No-Build Alternative

The No-Build Alternative does not conform to the local plans because it does not provide for improvements to the transportation network.

5.2.10.2 Selected Alternative

The Selected Alternative is consistent with all transportation plans at the state, regional, and local levels. It is designed to improve the transportation system and thus conforms to state and local land use plans to the extent that it would provide those improvements.

The Selected Alternative is consistent with Louisiana's *I-49 Regional Task Force Report* (DOTD 1998) as it would complete I-49 between New Orleans and

Shreveport. I-49 South would support economic growth, make industries in Southeast Louisiana more accessible, improve hurricane evacuation, and address existing and foreseeable safety issues. Section 1.3.1.2 of this FEIS provides more detail on the Task Force and its Report.

The local and regional transportation, land use and economic development plans focus on encouraging development of available developable land. St. Charles Parish has identified the need to address transportation deficiencies to take advantage of its strategic location between New Orleans and Baton Rouge. Evidence of a trend in new development can be seen in the Luling area, which has a number of new residential subdivisions and commercial establishments. It is believed that this trend is a result of linking the St. Charles Parish study area to the east bank of the Mississippi River by completion of I-310 in 1993.

Jefferson Parish's comprehensive land use plan, *Envision Jefferson 2020* (Jefferson Parish Government and the Regional Planning Commission 2002), relies upon the same strategy with emphasis on improvements to the transportation network. Most of the remaining vacant land in Jefferson Parish is on the Westbank. A substantial area, located south of US 90 is planned for future development. The plan foresees that new residential development on the Westbank is made attractive by connectivity to jobs. The plan recognizes that upgrading existing roadways benefits both those who commute in personal vehicles and those who depend upon transit, because the JeT buses operate on these roadways.

There is no adopted plan for Lafourche Parish in the I-49 corridor.

5.3 Air Quality Analysis

This section summarizes the air quality impact findings presented in the *Air Quality Analysis Technical Report* for the project. The analysis examined the potential for project impacts on localized air quality compared to the NAAQS as required by the FHWA using USEPA-approved methodologies. The report also qualitatively assessed the effect of the project on regional mobile source air toxics (MSATs) as required by the Council on Environmental Quality (40 CFR 1502.22(b)) and FHWA guidance.

5.3.1 Carbon Monoxide Air Quality Evaluation

This analysis was completed in accordance with the USEPA *Guideline for Modeling Carbon Monoxide from Roadway Intersections* (EPA-454/R-92-005) (1992). To complete this analysis, the highest traffic volume intersection was identified to complete CO modeling for the worst-case scenario, collected necessary data (traffic, roadway design, meteorological, etc.), computed traffic flow conditions based on free-flow and stopped vehicles, selected receptor points, modeled vehicle emissions using USEPA MOBILE6.2, modeled ambient concentrations of CO using USEPA's CAL3QHC dispersion model, and compared CO concentrations with NAAQS.

Table 5-5 shows the results of the CAL3QHC dispersion modeling for CO at the worst case intersections of US90/Victory Drive North and South. The CAL3QHC modeled concentrations do not exceed the NAAQS for CO in either the 1- or 8-hour averaging periods at each receptor location in 2006, 2010, or 2030. Under the 2030 Build scenario, maximum CO concentrations are less than the 2030 No-Build, 2010

Build, and Existing scenarios.

The improvement in air quality concentrations can be attributed to the combination of a reduction in traffic congestion as a result of the project and expected improvements in vehicle engine performance. For all scenarios evaluated, the maximum 1-hour and 8-hour CO concentrations are significantly below the NAAQS. Therefore, the proposed I-49 South is not anticipated to adversely impact air quality along critical intersections in this corridor to levels above what is considered protective of human health and the environment.

Table 5-5
1-Hour and 8-Hour CO Concentrations at Victory Drive - 2006, 2010, and 2030

Case	Year					
	2006		2010		2030	
	1 Hour (ppm)	8 Hour (ppm)	1 Hour (ppm)	8 Hour (ppm)	1 Hour (ppm)	8 Hour (ppm)
Victory Drive - Build	NA	NA	4.0	2.9	3.5	2.5
Victory Drive – No-Build	5.2	3.7	NA	NA	4.1	2.9
NAAQS	35	9	35	9	35	9

Source: ARCADIS, 2006, Air Quality Analysis Technical Report.

The USEPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources, 66 FR 17229 (March 29, 2001). In its rule, USEPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, its proposed heavy duty engine and vehicle standards, and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, the FHWA projects that even with a 64 percent increase in VMT, these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 percent to 65 percent and will reduce on-highway diesel PM emissions by 87 percent.

The amount of MSATs emitted is proportional to the vehicle miles traveled (VMT), assuming that other variables such as fleet mix are the same for each project scenario. The peak hourly traffic volume for the I-49 2010 and 2030 Build scenarios is lower than the 1-49 No-Build scenario for both worst case US90/Victory Drive North and South intersections. The peak hourly VMT for the I-49 2010 and 2030 Build scenarios is lower than the I-49 No-Build scenario for both intersections. Based on these findings, I-49 is expected to relieve congestion on US 90 at the intersections with Victory Drive. In terms of air quality, it is expected there would be a reduction in regional MSAT emissions for all Build scenarios in the design year. The reduction can be attributed to the reduction in VMT due to more direct routing and also a reduction in vehicle emissions as a result of the implementation of USEPA's MSAT reduction programs. Also, regardless of the scenario, regional MSAT emissions will likely be lower in the design year when compared to current levels as a result of USEPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020.

Localized conditions may differ from regional MSAT concentrations. MSAT emissions in some areas of proposed I-49 could potentially increase where localized increases in VMT occur. Unfortunately, the magnitude and duration of these potential increases cannot be accurately quantified due to the inherent deficiencies of current models. The USEPA vehicle and fuel regulations, coupled with fleet turnover, will cause substantial reductions that, over time in almost all cases, will cause regional MSAT levels to be significantly lower than today. The magnitude of the USEPA-projected reductions is significant enough to reasonably expect that MSAT emissions and impacts in the study area to be lower in the future despite the growth of VMT.

5.3.2 Construction Air Quality

The construction contractor is responsible for the protection of the general public and workers throughout the project construction. Construction equipment will be required to comply with Occupational Safety and Health Administration (OSHA) Regulations for employee safety and in accordance with DOTD Standard Specifications.

Short-term impacts to air quality could result from the construction and development of the proposed project. However, it is beyond the scope of this analysis to evaluate the significance of potential air quality impacts from construction activities.

5.4 Noise Analysis

As indicated in Chapter 4, existing noise levels were measured throughout the study area (see Project Atlas in Chapter 2). The maximum design year peak-hour L_{eq} traffic noise levels expected for receptors in the vicinity of the project were predicted. FHWA's TNM was used to compare predicted noise levels for the maximum analysis year (2030) and current noise levels to determine if traffic noise impacts can be expected from the proposed project. Traffic noise impacts were determined in accordance with FHWA regulations and guidelines published as Section 772 of Title 23 of the Code of Federal Regulations (23 CFR §772) and DOTD Highway Traffic Noise Policy (2004). Where traffic noise impacts are predicted, the analysis includes an evaluation of alternative noise abatement measures. Traffic noise impacts occur when the predicted traffic noise levels either:

(a) equal or exceed the DOTD NAC, or
(b) exceed the existing noise levels by 10 dBA.

Receptors can be positively affected by noticeable future reductions in noise of 5 dBA or more when nearby traffic would be routed away from them by the project. Both impacted receptors and those receiving a noise reduction are enumerated in **Table 5-6** for the Selected Alternative. The table indicates that the land use categories with the most impacts due to the Selected Alternative and the No-Build Alternative are residences and commercial properties. Several community facilities, including a few churches, would experience noise impacts.

Under existing conditions, 203 residences, 170 commercial properties and 9 community facilities are impacted by traffic noise. In the 2030 No-Build condition, the number of impacted residences will increase to 251; the number of impacted commercial properties will increase to 194; and the number of impacted community facilities will increase to 13. With the Selected Alternative in place, 2030 traffic noise

levels will impact 488 residences, 94 commercial properties and 12 community facilities. The design of I-49 South and the changes it will make in the location of existing and new roads as well as traffic volumes on those roads will reduce noise levels by 5 dBA at 95 residences, 56 commercial properties and 2 community facilities compared to the No-Build condition.

Details of the study and predicted impacts are available in the *Noise Analysis Technical Report* (ARCADIS 2005, revised 2006) prepared for I-49 South.

Since traffic noise impacts are predicted, alternative noise abatement measures for reducing or eliminating the noise impacts must be considered. When considering noise abatement measures, every effort must be made to obtain a noise reduction of at least 8 dBA.

Noise abatement measures considered for all impacted receivers included:

- Highway alignment modification;
- Noise insulation (public use or non-profit institutional structures);
- Traffic system management measures (reduced speed limits, control of access);
- Property acquisition for the construction of noise barriers; and
- Noise barriers (which must be proven to be reasonable and feasible)

Highway alignment modification was not considered practical, as the Selected Alternative alignment has been designed to reduce human and environmental impact to the maximum extent practicable while meeting DOTD design standards. The use of insulation as a noise abatement measure is only a consideration for public use or nonprofit institutional structures and is normally limited to public use structures such as schools and hospitals. Based on the interior criterion, there is a church and mission hall that would be impacted in Link 6. Noise insulation measures for these structures will be evaluated further during design. Since proposed I-49 South is intended to be a full control of access interstate highway, traffic system management measures would not be feasible.

5.4.1 Noise Barriers

Noise barriers are most often used on high-speed, limited-access facilities where noise levels are high and adequate space is available for continuous barriers. For a noise barrier to provide sufficient noise reduction, it must be high enough and long enough to shield receptors from sizeable sections of the noise-producing roadway. Access openings in a barrier created by driveways or intersections severely reduce the effectiveness. Therefore, ground-mounted barriers in locations that would require multiple access openings for cross streets and driveways were not modeled.

Traffic forecasts for the Selected Alternative predict that the majority of the through traffic will travel on the elevated sections and local traffic will remain on the frontage roads at grade. Barriers that block noise from frontage roads do not block noise from elevated structure and vice versa. It is not reasonable on the basis of cost to block noise from both the elevated structure and the frontage roads; therefore, ground-mounted and elevated barrier walls in the same locations were modeled independently.

The twenty-four locations identified as noise barrier modeling locations are in areas with relatively high densities of impacted receptors and where the distance between the proposed project and the receptors is relatively short. Barriers are not an economical noise abatement method for individual or dispersed receptors. Once a maximum barrier size was established, the barriers under consideration were modeled using TNM to determine the level of noise reduction they would provide.

The barriers were then evaluated in accord with DOTD Traffic Noise Policy (2004), which requires that a barrier be both feasible and reasonable.

Consistent with federal regulations regarding feasibility, the policy states that at least one receiver must receive a minimum 8 dBA reduction. Barrier location 5-1 on the north side of the ROW in Avondale was the only location determined to be feasible.

Table 5-6
Noise Impact Summary

Link and Land Use	Number of Impacted Receivers			Receivers with > 5dBA Reduction
	2004 Current	2030 No-Build	2030 Build	
Link 1				
Residential	1	2	1	2
Commercial	0	1	0	4
Community Facility (a)	0	1	0	0
Link 2				
Residential	64	83	36	60
Commercial	7	21	1	28
Community Facility (a)	0	0	0	0
Link 3				
Residential	25	47	89	32
Commercial	10	18	0	18
Community Facility (a)	3	3	0	2
Link 4				
Residential	7	8	7	0
Commercial	10	11	2	0
Community Facility (a)	0	1	1	0
Link 5				
Residential	15	21	55	0
Commercial	3	6	16	0
Community Facility (a)	1	3	5	0
Link 6				
Residential	91	90	300	1
Commercial	140	137	75	6
Community Facility (a)	5	5	6	0
Totals				
Residential	**203**	**251**	**488**	**95**
Commercial	**170**	**194**	**94**	**56**
Community Facility (a)	**9**	**13**	**12**	**2**

(a) Community facilities include churches, schools and other public locations.

The policy further states that to be reasonable the cost of the abatement measure should not exceed $25,000 per benefited receptor. A benefited receptor is defined as a sensitive receptor, whether impacted or not, receiving a noise reduction of at least 5

dBA as a result of the proposed abatement measure. Barrier Location 3-6 on the north side of the ROW in Boutte was the only location found to be reasonable.

Consideration also was given to other criteria for the noise barriers to meet both feasibility and reasonableness in accord with DOTD policy. These include access, safety, public support, and noise from other sources.

No noise barrier location was found to be both reasonable and feasible on the basis of all established criteria considered.

5.5 Water Resources

5.5.1 Surface Water

Roadways potentially contribute highway-related pollutants (oils, grease, metals, hydrocarbons, rubber particles) to surrounding areas through storm water runoff during rain events. Constituents present in storm water runoff that demonstrate a strong correlation with suspended solids include metals, organic compounds, total organic carbon, and biochemical oxygen demand (Erlacher, 2004).

Landscaped areas, such as highway shoulders and medians, along at-grade sections would filter storm water runoff. For elevated portions, existing vegetated areas below the highway are expected to perform similar storm water filtration.

5.5.1.1 No-Build Alternative

The No-Build case would result in no additional impact on surface water quality.

5.5.1.2 Selected Alternative

The Selected Alternative includes elevated roadways over Dufrene Ponds, Bayou Des Allemands, and through the Paradis Mitigation Bank, as well as across other wetlands and drainage canals. The potential exists for these water resources to be impacted by short-term loadings of additional total suspended solids (TSS) associated with highway storm water runoff during rain events. Typically, vegetation filters pollutants from highway runoff, resulting in less impact on downstream waterways.

In most cases, this filtration process removes the pollutants as water is cycled through these systems. Therefore, the Selected Alternative is not expected to cause negative impacts to surface waters. Additionally, St. Charles Parish bayous and canals are listed by LDEQ as impaired waters, but the suspected causes and sources of impairment are not highway runoff. See **Table 4-12** Waterbody Impairment Status.

In Jefferson Parish, the small canals in Bayou Segnette State Park are hydrologically connected by pump to Bayou Segnette and the Cataouatche Levee Canal. These waterways are already impaired by constituents unrelated to highway runoff and will not be further impacted by the proposed project. Bayou Segnette also is listed as impaired by discharges from the storm sewer systems and wet weather discharges that can cause them to overflow. The Selected Alternative would result in no additional impacts to surface waters provided that the project storm drain design is coordinated with Jefferson Parish where run-off would be collected by the urban storm drains.

Construction-related impacts of I-49 South could cause short-term increases in turbidity and sedimentation. Best management practices (BMP's) are discussed in Chapter 6.

5.5.2 Groundwater

5.5.2.1 No-Build Alternative

The No-Build Alternative would not impact existing groundwater quality, recharge potential, or area water wells.

5.5.2.2 Selected Alternative

Although the project overlies the Coastal Lowlands aquifer system, there would be no impact to any of the aquifers in this system from construction or operation of the facility. The depth of the aquifers combined with clay soils in the region form an effective barrier against infiltration of pollutants. Any waterborne contaminants that result from storm water runoff would travel slowly through the extensive soil profile before reaching the aquifers. Potential contaminants would be deposited in the soil material rather than be conveyed to the underlying aquifer. Proper maintenance of equipment along with BMP's during construction activities and daily refueling would minimize the possibility of accidental spills of fuels or lubricants. Accidental spills could potentially impact groundwater quality; however, containment and cleanup measures would be implemented immediately if a spill occurs. Spills that exceed 5 gallons would be immediately reported to the on-site supervisor, who would notify all appropriate authorities to ensure proper cleanup.

The five wells identified near US 90 in St. Charles and Jefferson Parishes east of the Davis Pond Diversion Canal may be impacted by project construction. During design, a determination of impact and the potential for relocation will be made.

5.5.3 Scenic Streams

The study area contains no federally listed Wild and Scenic Rivers. Bayou Des Allemands is a Louisiana Scenic Stream.

5.5.3.1 No-Build Alternative

No impacts to this resource are expected from the No-Build Alternative.

5.5.3.2 Selected Alternative

The Selected Alternative would require a new crossing of Bayou Des Allemands downstream of the existing US 90 bridge in an existing utility ROW. Construction activities associated with this bridge have the potential to temporarily impact the water quality of the bayou and the scenic quality of the bayou. A Class B permit that would be required from the LDWF is discussed in Chapter 6.

5.5.4 Navigable Waterways

Navigable waters are defined by Section 10 of the Rivers and Harbors Act of 1899 as waters subject to the ebb and flow of tide and/or presently/previously or susceptible for use to transport interstate or foreign commerce. Within the project corridor, the Bayou Des Allemands and adjacent canals, as well as the Bayou Lafourche have been

determined to be navigable waterways. The bayous, in particular, have established shipping channels within the project area. In addition, the hydrology of the project area is such that many waterways are tidally influenced.

Proposed activities with the potential to affect navigable waterways include widening the existing US 90 bridge over Bayou Lafourche, constructing a new bridge over Bayou Des Allemands and constructing a new elevated structure across Dufrene Ponds. During design, detailed analysis of shipping channel clearance requirements will be undertaken, possibly including a navigation study of each affected waterway. These analyses will help establish horizontal and vertical clearance requirements for the shipping channels and will guide appropriate design of structural elements.

Coordination with the Corps of Engineers, the U.S. Coast Guard and the relevant pilot's associations will be undertaken during analysis and design to assure that proposed structures are designed in accord with current regulations and navigation operations. As required by Section 10, all practicable means to design and construct the bridge widening and new structures will be undertaken to avoid creating temporary and/or permanent hazards to navigation.

5.6 Natural Communities

5.6.1 Vegetation and Wildlife

5.6.1.1 No-Build Alternative

The No-Build Alternative would involve no disturbance of existing vegetation or wildlife. Current US 90 roadway maintenance activities, such as grass mowing and brush trimming, would continue according to the existing maintenance plan.

5.6.1.2 Selected Alternative

Where the Selected Alternative would use the existing highway ROW or traverse habitats classified as previously disturbed, such as in Westwego, Marrero, and just east of LA 182, construction impacts would be temporary and the vegetation would re-establish to the extent that ROW maintenance practices allow. Previously disturbed wildlife habitats within the study area are commonly occurring; most species using these disturbed areas would easily relocate with little or no effect.

At-grade roadways included in the project would cause complete loss of all types of vegetation within the project ROW. West of Dufrene Ponds, at-grade construction would primarily disturb grassy shoulders, sugarcane fields and some bottomland hardwood forest. At-grade roadway sections would require box culverts or other design features to maintain water flow, thereby preserving existing hydrology.

The Selected Alternative would be constructed on new alignment across Dufrene Ponds, Bayou Des Allemands and the Paradis Mitigation Bank. Within the Paradis Mitigation Bank, some bottomland hardwood species near Bayou Saut d'Ours would be impacted. Most of the area is open grassland that may be converted to wetlands prior to construction.

Between Boutte and the Davis Pond Diversion Canal, the Selected Alternative will be an elevated roadway on a new alignment north of US 90 on the Monsanto property. I-49 would be constructed through a grassy buffer area and some ditch side

vegetation until it crosses the railroad into the US 90 ROW. From this location to the Davis Pond Diversion Canal, the Selected Alternative would be constructed over grassy shoulders, roadside ditches, and some bottomland hardwood habitat east of Willowdale Boulevard. The at-grade frontage roads would have the largest impact in this immediate area.

Elevated sections crossing forested wetlands on new ROW would not affect wetland hydrology; however, shading may inhibit re-vegetation within the footprint and forested systems would be permanently lost. Elevated sections would allow the movement of terrestrial wildlife at grade and would minimize vehicle-related conflicts with wildlife. Elevated structures also may provide new habitat for roosting bats, swallows, swifts, and other structure-nesting species. Areas of high-, medium-, and low-quality habitat are shown on **Exhibits 2-13 and 4-7**.

Upon project completion, disturbed areas that are not inundated would be seeded and maintained in accordance with DOTD's roadway maintenance program.

5.6.2 Aquatic Community

5.6.2.1 No-Build Alternative

The No-Build Alternative would involve no disturbance of area waterways since there would be no new construction, but increased traffic on US 90 may increase the volume of potential pollutants to area waters near congested intersections.

5.6.2.2 Selected Alternative

The Selected Alternative is not anticipated to have a substantive impact on aquatic ecology. Potential impacts from construction activities could include habitat modification and degradation of water quality through increased erosion, runoff, sedimentation, and turbidity. Spillage of petroleum and other chemical products is possible during construction and after the facility is operational.

The project will employ Best Management Practices (BMP's) to avoid impacts to aquatic communities to the greatest extent practicable and to minimize impacts where avoidance is infeasible. BMP's and other mitigation measures to protect water resources and water quality are discussed in Chapter 6.

5.7 Wetlands

5.7.1 No-Build Alternative

The No-Build Alternative involves no new construction that may result in an impact on wetlands.

5.7.2 Selected Alternative

The approximate acres of potential wetlands within the ROW that would be impacted by the Selected Alternative total 578.9 as presented in **Table 5-7.** For each Link**,** the types of wetlands by vegetative association that are found in that Link are shown, and their condition is indicated numerically as follows:

1. No Impact
2. Hydrology Impact as it is leveed, pumped, or artificially constricted.
3. Vegetation Impact as it is logged, cleared, or has other impacts.

Table 5-7
Estimated Wetland Impacts

Link	Vegetation Association	Condition	Total Wetland Impacts (acres)	Impacts (acres)					
				Cleared	Filled	Dredged	Shaded	Impounded	Drained
1	Bottomland Hardwoods	3	**1.5**	0.0	1.5	0.0	0.0	0.0	0.0
		4	**58.8**	31.9	3.5	0.0	23.4	0.0	0.0
	Scrub/Shrub	2	**0.6**	0.3	0.0	0.0	0.3	0.0	0.0
		4	**17.3**	8.8	0.9	0.0	7.7	0.0	0.0
	Link Total		**78.3**	41.0	5.9	0.0	31.4	0.0	0.0
2	Bottomland Hardwoods	4	**7.9**	4.2	0.4	0.0	3.3	0.0	0.0
	Marsh	2	**7.3**	1.2	3.0	1.1	2.0	0.0	0.0
	Scrub/Shrub	4	**32.6**	10.6	12.2	0.0	9.8	0.0	0.0
	Link Total		**47.8**	16.0	15.5	1.1	15.2	0.0	0.0
3	Bottomland Hardwoods	2	**66.7**	13.5	39.5	0.0	13.7	0.0	0.0
		4	**54.7**	26.6	4.9	0.0	22.0	1.2	0.0
	Cypress/Tupelo Swamp	2	**43.0**	21.6	6.9	0.0	14.5	0.0	0.0
	Marsh	3	**1.0**	0.5	0.0	0.0	0.4	0.0	0.0
		4	**14.6**	4.4	7.3	0.0	2.9	0.0	0.0
	Scrub/Shrub	3	**1.1**	0.7	0.0	0.0	0.4	0.0	0.0
	Link Total		**181.0**	67.2	58.7	0.0	54.0	1.2	0.0
4	Bottomland Hardwoods	2	**30.8**	1.8	26.8	0.0	2.2	0.0	0.0
		4	**5.1**	1.7	1.6	0.0	1.8	0.0	0.0
	Scrub/Shrub	4	**2.8**	0.6	0.6	0.0	1.6	0.0	0.0
	Link Total		**38.7**	4.1	29.0	0.0	5.6	0.0	0.0
5	Bottomland Hardwoods	4	**151.0**	97.8	18.8	0.0	34.3	0.0	0.0
	Farmed/Pasture	4	**0.3**	0.1	0.0	0.0	0.2	0.0	0.0
	Marsh	4	**3.3**	1.5	0.2	0.0	1.6	0.0	0.0
	Scrub/Shrub	4	**78.6**	46.6	10.4	0.0	21.6	0.0	0.0
	Link Total		**233.1**	146.0	29.4	0.0	57.7	0.0	0.0
6	Link Total		**0.0**	0.0	0.0	0.0	0.0	0.0	0.0
Total	Bottomland Hardwoods		**376.4**	177.5	96.9	0.0	100.8	1.2	0.0
	Cypress/Tupelo Swamp		**43.0**	21.6	6.9	0.0	14.5	0.0	0.0
	Farmed/Pasture		**0.3**	0.1	0.0	0.0	0.2	0.0	0.0
	Marsh		**26.1**	7.6	10.5	1.1	6.9	0.0	0.0
	Scrub/Shrub		**133.1**	67.5	24.2	0.0	41.4	0.0	0.0
	TOTALS		**578.9**	**274.3**	**138.5**	**1.1**	**163.8**	**1.2**	**0.0**

4. Hydrology and vegetation are both impacted.

The table also presents the categories of impacts, measured in acres, as follows:

- Cleared refers to construction impacts including clearing of vegetation and / or temporary fill.

- Filled refers to areas of permanent fill sections for at-grade construction and the piles for elevated construction.
- Dredged areas are not currently planned, but may occur in Dufrene Ponds depending on the method of construction selected.
- Shaded refers to the area under the elevated roadways that will be shaded part of each day and will not support trees.
- Impounded and Drained refer to areas potentially impacted by construction of I-49 that would not be within the ROW.

The impacts to wetlands are anticipated to result from shading and footprint support, which would be 90% and 10% respectively. A formal wetland delineation and Jurisdiction Determination from the USACE will be undertaken during design in conjunction with the 404/10 Permit process. Permits that may be required for impacts to potential wetlands as a result of construction of proposed I-49 South are discussed in Chapter 6. The following outlines the apparent wetland impacts by Link:

- In Link 1, I-49 follows the existing US 90 alignment in Lafourche Parish to the extent possible, and would impact potential wetlands within the existing ROW that exhibit evidence of prior disturbance. Some of these wetlands would be considered vegetated wet ditches that may be considered jurisdictional. The majority of the potential impacts would be to bottomland hardwood and scrub/shrub wetlands.
- In Link 2, the open water of Dufrene Ponds and Bayou Des Allemands would be considered "other waters." The vegetated marsh along Bayou Des Allemands and the edges of Dufrene Ponds near US 90 and would be considered fresh marsh.
- In Links 2 and 3, both within and outside of the Paradis Mitigation Bank, wetlands are primarily considered bottomland hardwoods. Although hydrologically altered, the bottomland hardwood habitat south of US 90 appears to remain inundated and appears to be healthy. Field observations indicated that the potential wetlands north of Mosella were bottomland hardwoods that had been impacted by logging.
- In Link 4, some impacts to vegetated wet ditches may be considered jurisdictional. The primary potential wetlands affected are bottomland hardwoods associated with the interchange at Willowdale Boulevard.
- In Link 5 the wetland impacts include primarily bottomland hardwoods, with some scrub/shrub and marsh.
- In Link 6 no wetlands would be impacted.

5.7.3 Only Practicable Alternative Finding

The Selected Alternative meets the requirements of Executive Order No. 11990 as:

1. There is no practicable alternative, as discussed in Chapter 2 of this FEIS, because the Selected Alternative utilizes the existing US 90 alignment to the maximum extent possible given design criteria for interstate highways; and
2. The proposed action includes all practicable measures to minimize harm to wetlands, as discussed in Chapter 2 and Chapter 6 of this FEIS.

Based upon the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands which may result

from such use.

5.8 Floodplains

5.8.1 No-Build Alternative

As no construction would occur under the No-Build Alternative, no impacts to the existing floodplain are expected.

5.8.2 Selected Alternative

Since the 2005 hurricane season, it was determined that I-49 South between Raceland and the Westbank Expressway should be constructed entirely as an elevated roadway. Elevating the roadway would provide clearance of the 100-year floodplain.

The minimum vertical elevations of at-grade sections of new roadways in the project would remain above the 50-year storm elevation according to state highway hydraulic standards, which requires the edge of the left travel lane to be equal to 5.0 feet msl.

Flood Insurance Rate Maps, 1997 Revision (digital version made available in 2000), were analyzed to estimate the extent of encroachment of the Selected Alternative upon the 100-year floodplain. Based on the number of acres of additional required ROW to be used for the construction of new at-grade roadways, the estimated potential impact on the 100-year floodplain is 204.5 acres. There also are 24.8 acres to be used for at-grade roadways within the 50-year floodplain.

5.9 Levees

5.9.1 No-Build Alternative

No new construction is associated with the No-Build Alternative that would have the potential to impact levees.

5.9.2 Selected Alternative

The elevated highway design of the Selected Alternative would provide vertical clearance of existing Sunset Drainage District levee and the Davis Pond Diversion Canal levees as discussed in Section 2.3.4.4. Any additional levees constructed, or designed and funded prior to final design of I-49, also would be accommodated. As an elevated structure, clearance of at least 16.5 feet above grade at the time of construction would be available throughout.

5.10 Coastal Areas

The portion of the study area that lies within the Louisiana Coastal Zone will require review by LDNR. Areas known as fastlands crossed by the Selected Alternative may be exempt from regulation and permitting because activities on these lands, which are surrounded by publicly owned, maintained, or otherwise validly existing levees, would not impact coastal waters. Also, sections built on elevated structures causing less impact than at-grade roadways may receive a “No Determination of Significant Impact” (NDSI) from LDNR.

5.10.1 No-Build Alternative

No impacts to the coastal zone would be expected from the No-Build Alternative.

5.10.2 Selected Alternative

East of Bayou Des Allemands, the Selected Alternative lies within the coastal zone except where it crosses the Sunset Drainage District and the Cataouatche and Westwego Hurricane Protection Levee areas, which are fastlands. Impacts to the coastal zone would be minimized through the elevated roadway design. Chapter 6 discusses mitigation of unavoidable impacts through the permit process. .

5.11 Protected Species and Habitats

In accordance with the Endangered Species Act (ESA) and the Fish and Wildlife Coordination Act, LDWF reviewed the I-49 South project area against the proprietary databases of threatened and endangered species compiled by LNHP for USFWS.

5.11.1 No-Build Alternative

The No-Build Alternative would have no adverse impact on threatened and endangered species or critical habitats for threatened or endangered species.

5.11.2 Selected Alternative

Four bald eagle nests are located within one-mile of the Selected Alternative. Two are exposed to noise associated with the BNSF railroad and existing traffic, one from US 90 within the one-mile and one from LA 631 within a 1,500 foot buffer. Two nests are exposed to noise from farm equipment, grazing animals, off-road vehicle use, and boat traffic on Bayou Des Allemands during the nesting season. A draft *Biological Assessment Report* was prepared and submitted to the USFWS and LDWF. Formal consultation with the USFWS and LDWF has been on-going during development and evaluation of the I-49 South alternatives and during the DEIS. The findings of the BA and agency consultation indicate that the Selected Alternative is not likely to adversely impact the bald eagle nests.

While not protected under the Endangered Species Act (ESA), wading bird rookeries may be present in the ROW. Chapter 6 discusses steps required if rookeries are found in the ROW during the breeding season during construction..

5.12 Cultural Resources

5.12.1 No-Build Alternative

Under the No-Build Alternative, no adverse impacts to any known archaeological sites or historic structures would occur within the study area.

5.12.2 Selected Alternative

The State Historic Preservation Officer, in a letter found in **Appendix 5-A** has determined that the Selected Alternative would not have an adverse impact on cultural resources provided that the following conditions are met:

- As the Selected Alternative has the potential to impact archaeological Site 16JE29, and as permission to evaluate this site was not granted by the landowner, a delineation and evaluation of the site will be done after acquisition of the ROW

and prior to construction of the project. If determined eligible, appropriate mitigation measures will have to be undertaken; and

- The entire area around Bayou Saut d'Ours is considered archaeologically sensitive. Previously recorded sites in the area include NRHP eligible 16SC2 (the Sims Place site) and NRHP ineligible 16SC70. The Selected Alternative will have no impact on 16SC2. Test excavations at 16SC70 confirm that the site is ineligible for the NRHP, and the Selected Alternative would have no effect on historic resources at the site. Given the close proximity of the Selected Alternative to eligible resources in the Bayou Saut d'Ours vicinity, there is a potential for discovery of unrecorded resources during construction, which shall be stated in the construction documents. If previously undocumented cultural resources are encountered in the vicinity of Bayou Saut d'Ours, these resources will be recorded, evaluated, and mitigated as appropriate.

5.13 Geology, Soils and Topography

5.13.1 No-Build Alternative

The No-Build Alternative would involve no disturbance of existing soils, the underlying geologic features, or the topographic character of the project study area.

5.13.2 Selected Alternative

The Selected Alternative would involve soil disturbance to construct the new roadways, remove existing roadway sections, construct or modify drainage features, and install or modify infrastructure. Minimal physical impact on the underlying geologic formations as a result of pile driving may occur. Minor topography changes would take place at the proposed new interchanges and other new at-grade roadway.

5.14 Prime Farmland

5.14.1 No-Build Alternative

The No-Build Alternative would involve no impacts to prime farmlands.

5.14.2 Selected Alternative

An estimated 345 acres of prime or unique farmland soils are found in the additional required ROW. Construction would permanently and unavoidably remove much of this prime or unique farmland soils from actual or potential agricultural use. Of these acres, only 24 acres in Link 1 are currently in agricultural use. The 127 acres in Links 2, 3, and 4 are primarily within the Paradis Mitigation Bank or the Monsanto property.

5.15 Mineral Resources

As the primary mineral resources located in the project area are petroleum related, environmental consequences associated with the Selected Alternative were determined by impacts to oil and gas production due to displacements of wellheads.

5.15.1 No-Build Alternative

The No-Build Alternative would not affect existing oil and natural gas production.

5.15.2 Selected Alternative

Table 5-8 presents the potential impacts to mineral resources by the Selected Alternative. One active-producing well and one Temporary Inactive Well would be unavoidably impacted. Impacts would be addressed during ROW acquisition.

5.16 Hazardous Waste Sites

5.16.1 No-Build Alternative

The No-Build Alternative would involve no new construction activity. The DOTD would continue to conduct a program of routine maintenance within the US 90 ROW.

Table 5-8
Oil and Gas Well Impacts

Well Type	Number
Active-Producing	1
PA-35 Temporary Inactive Well	1
Dry and Plugged	1
Plugged and Abandoned	7
TOTAL	**10**

This on-going activity is not anticipated to have an effect on, or be impacted by, known hazardous waste sites as none are known to occur within the existing ROW.

Spills of hazardous materials being transported on US 90 pose a potential threat to environmental quality. Local or state law enforcement provides initial response to incidents on US 90 and other state highways involving spills of potentially contaminated or hazardous materials. The local public safety agency or state police will control a site relating to spill containment or clean-up. Typically, local fire departments respond and take action to contain a spill. Other agencies may be notified based on the spill circumstance. If liquid were flowing into a waterway, the USCG would be contacted immediately and would be responsible for responding to contain the spill within the waterway. Generally the owner of the incident vehicle selects a private firm to clean up the spilled material. If the owner has no preference, or fails to do so, the state police will select a local contractor.

5.16.2 Selected Alternative

Links 1 through 4

One recognized environmental condition (REC) was identified on or near the Selected Alternative ROW in Links 1 through 4. Due to the lack of information in pertaining to the apparent municipal landfill in the historic photographs, the landfill is considered to be a REC. Further investigation is recommended to determine the extent and potential liabilities associated with this REC.

The Selected Alternative would be primarily located in an undeveloped area north of the BNSF Railroad and south of the Monsanto Chemical Plant buffer area in Link 4; therefore, no sites of environmental concern were identified. It is not anticipated that the Monsanto hazardous waste landfill would impact the Selected Alternative.

Links 5 and 6

Of the 78 REC's in the study area of Links 5 and 6, 41 RECs are within or adjacent to the ROW of the Selected Alternative. These sites range from landfills and junkyards to equipment facilities, gas and automotive service stations, convenience stores, retail establishments, public properties, boat yards, communications towers and industrial facilities.

Generally, direct impacts from the landfills in Link 5 are not expected; however, some monitoring wells associated with the landfills could be impacted. The additional ROW would likely encroach upon the existing buffer zone required for the Jefferson Parish Landfill. Although the GNO and Area 90 landfills are closed, additional required ROW will impact groundwater monitoring wells and would possibly impact the minimum required buffer zone for the GNO Landfill.

Several automobile salvage yards and heavy equipment service facilities with observed conditions of environmental concern are on or near the ROW. Underground storage tanks and/or fuel pumps associated with service stations in or adjacent to the ROW are also considered RECs. Potential leaking underground storage tanks located within 0.5 mile of the Selected Alternative were considered historic RECs. A former above ground storage tank site within the ROW west of the US 90 interchange at Bridge City was also considered a REC.

Several pits/impoundment areas near the ROW may have been associated with oil and gas exploration activities in Link 5. As some of these pits were in operation prior to 1988, they were likely not registered with LDNR and information regarding the contents and construction of the pits would likely not be available. Because potential subsurface impacts from these pits could have occurred within the Selected Alternative ROW, they are considered RECs.

5.17 Energy and Utility Impacts

5.17.1 No-Build Alternative Energy and Utility Impacts

The No-Build Alternative would result in an energy expenditure equivalent to that which is currently used to maintain and operate existing US 90. No new or additional expenditures would be required until such time as existing facilities require replacement. As there would be no new construction or acquisition of new ROW, no utility impacts are anticipated.

5.17.2 Selected Alternative Energy Impacts

The Selected Alternative would require commitment of labor, equipment, and materials. Construction-related energy consumption would be a short-term expenditure that would be offset over the life of the project by energy efficiency gained from the improved transportation facility. Once operational, the energy needs of proposed I-49 South would be associated with facility maintenance and daily operations. Facility maintenance would involve the repair and general servicing of highway amenities including the highway section components, its structures, supporting utilities, signs, drainage structures, and landscaped areas. As with the existing US 90 facilities, these amenities would be designed with specific

maintenance schedules that would be programmed into the DOTD's statewide manpower and cost budgets.

5.17.3 Selected Alternative Utility Impacts

Impacts to utilities were evaluated using information provided by Parish and municipal entities as well as private companies and through field reconnaissance. Evaluations were made for impacts to electrical, water, sewer, and natural gas utilities. Any relocation of utilities would be conducted in a timely and orderly fashion and be planned so that any disruptions in service were minimized and safety not compromised.

Existing electrical, sewer and water distribution lines adjacent to existing US 90 may require relocation with temporary disruption of service under the Selected Alternative. Other potentially affected utilities may include:

- Three existing electrical transmission lines at approximately 90 degree angles west of Dufrene Ponds;
- One existing electrical transmission line near I-310. Approximately 1,500 feet of transmission lines would require relocation. It is anticipated that the lines could be relocated without relocation of support structures.
- Pipeline relocations between Boutte and Davis Pond Diversion Canal;
- Relocation of the railroad switch connecting the BNSF with the rail line on the Monsanto property;
- 12 pipelines and 30 high voltage lines may require relocation during construction. These include Gulf South Pipeline, Dominion, Entergy, Atmos Energy, and St. Charles and Jefferson Parishes.

5.18 Visual Impacts

5.18.1 No-Build Alternative

The No-Build Alternative would have no impact on existing views and aesthetic characteristics of the project area.

Changes in the visual environment under the No-Build Alternative would be those associated with the slow transition from rural to suburban and urban land use. US 90 would remain unchanged except for maintenance activities such as resurfacing.

5.18.2 Selected Alternative

The proposed I-49 South design east of the LA 182 interchange would create a view of an elevated interstate from the developed area. While the agricultural identity of the area would remain, a more suburban aspect would be noticeable.

The Selected Alternative would result in the view of an elevated freeway over Dufrene Ponds from Cypress Drive and development on US 90 east of Dufrene Ponds. Comments received at public meetings indicate that Dufrene Ponds is considered a valued aesthetic resource that would be diminished by the view of an elevated freeway. The Selected Alternative also would construct a third roadway bridge over Bayou Des Allemands.

The Selected Alternative would introduce an elevated interchange in a currently rural portion of US 90 near LA 635. It would also introduce crossings of several roadways

with elevated highway bridges. These include local streets, as well as from west to east, the following highways: LA 306 (Bayou Gauche Road), US 90, LA 631 (Old Spanish Trail), LA 3127, and LA 52 (Paul Maillard Road). The principal changes in the landscape would be as I-49 crosses LA 631 in Mosella and the end of Alexander Street in Boutte because of residences in proximity to the ROW in these locations.

The Selected Alternative would be aligned through the buffer area of the Monsanto property and would result in removal of the vegetation north of the railroad, which may change the visual character of the area. In addition, the construction of an elevated crossing of the railroad and the Willowdale Boulevard interchange will introduce a more urban appearance to that immediate vicinity.

The Selected Alternative would be elevated and would be visible from the commercial area of Avondale. It would also provide a view of the landfills, which are currently not visible to travelers on US 90.

The Selected Alternative would complete the unfinished portion of the Westbank Expressway in Westwego and Marrero. The at-grade portion of the Westbank Expressway from the US 90/US 90 Business interchange will be replaced with an elevated section that will incorporate the visual elements of the existing elevated Westbank Expressway (US 90 Business), which was carefully designed and landscaped to be an aesthetically pleasing addition to the commercial corridor.

5.19 Construction Impacts

5.19.1 Traffic and Circulation Impacts

5.19.1.1 No-Build Alternative

The No-Build Alternative would not disrupt traffic and circulation patterns.

5.19.1.2 Selected Alternative

Construction would result in isolated short-term transportation impacts to businesses and residences whose primary vehicular access is provided by US 90. Traffic control plans for maintenance of traffic during construction typically are finalized during the project design phase and included in the construction contract as discussed in 6.2.12. These plans typically are deferred to the design process because the traffic impact at the time of construction cannot be identified properly at the conceptual design level described in a FEIS. Two locations in this project, however, warrant preliminary discussion in this FEIS because of the anticipated magnitude of traffic impacts:

- Segment 1 as defined in Section 8.3.1 includes widening the existing crossing of Bayou Lafourche and connecting it to the elevated structures of I-49. To construct this while maintaining four through lanes of traffic on US 90, it would be necessary to widen one of the existing crossing structures sufficiently to temporarily carry four lanes of traffic while the other crossing structure would be widened and connected to I-49. Once that is completed, traffic would be shifted to the finished structure to enable the connection of the first one to I-49.
- Segment 15 requires that the end of the existing elevated Westbank Expressway be demolished from approximately Station 1942+00 to the point at which it reaches grade to permit the connection of the existing and new sections of I-49. During

demolition, northbound traffic on the Westbank Expressway would be required to exit at Ames Boulevard and continue along the frontage roads until reaching a new entrance ramp beyond Victory Drive, approximately 8,000 feet. While this detour requires northbound traffic to exit on a one lane ramp, it must be remembered that under current conditions the right lane ends at Ames Boulevard and the left lane is effectively a left turn only lane. There is only one through lane at this location today. Once the demolition is completed, construction can progress on I-49 from the north, completing the northbound entrance and southbound exit at Ames Boulevard. This would reduce the distance between the ramps to less than 2,000 feet. The last step would be to complete the connection of the elevated mainline.

Southbound traffic also would be constricted during this period by being routed through the Ames Boulevard intersection and using the one lane entrance ramp to access I-49. However, as today, once traffic reaches the elevated road, no merge would be required as the existing lanes would have been demolished.

5.19.2 Other Construction Impacts

Other relatively short-term impacts of the Selected Alternative include the effects of pile driving, impacts to wetlands, temporary displacement of wildlife, and temporary degradation of air and noise quality. Crossing of open water areas may result in temporary interruptions in the flow of surface drainage ways and the possibility of increased siltation that would impact the aquatic environment.

5.20 Project Costs

5.20.1 No-Build Alternative

The No-Build Alternative would not incur ROW, construction, and mitigation costs.

5.20.2 Selected Alternative

Typical costs associated with the development of an interstate highway following the NEPA process include:

- Design including Preliminary and Final Design and Permitting,
- Right-of-way acquisition,
- Mitigation including wetland mitigation and other commitments, but not including relocation,
- Relocation expenses including lost revenues for impacted businesses,
- Construction, and
- Construction Management and Project Management.

These cost categories are more fully discussed in Chapter 8. The current estimate for completion of this project in Year of Expenditure dollars, including estimates for ROW acquisition, relocation expenses, and wetland mitigation is $5 billion.

5.21 Project Funding

As of the distribution date of this FEIS, no financial plan for the design and construction of proposed I-49 South has been established by DOTD. The I-49 South Task Force, however, has identified potential solutions to address state transportation funding that include**:**

- Dedication of virtually all revenues to preservation of the existing system;
- Concentration of available resources on a core network;
- Decrease of the state highway system and increase the Parish Road Fund;
- Increase of the fuel tax
    - for local transportation improvements, or
    - for specific transportation improvements;
- Development of innovative funding mechanisms including:
    - Toll Financing,
    - State Revolving Funds,
    - Privatization,
    - Partnerships,
    - State Infrastructure Banks (SIB's), and
    - Federal Innovative Financing Program.

Toll financing is currently being studied under a separate contract as a mechanism for funding proposed I-49 South. If at some point in the future toll financing is considered a viable funding option, public comment will be sought.

5.22 Intermodal Connectivity Considerations

Intermodal connectivity considers how a transportation project positively affects multiple modes of transport including rail, transit, carpooling, and pedestrian and bicycle facilities.

5.22.1 No-Build Alternative

The No-Build alternative would result in no increase of intermodal connectivity.

5.22.2 Selected Alternative

As a national transportation corridor, I-49 would provide a key north-south link throughout the central United States that is consistent with federal, state, and local planning efforts. It provides connectivity from the US 90 corridor to north Louisiana and the nation.

5.23 Joint Development Concerns

Joint development is defined by FHWA as an effort of a public agency and a private entity to undertake a construction project. Joint developments are mutually beneficial developments associated with public infrastructure projects. They can be accomplished through legally binding mechanisms between the public agency and private developer or through informal co-development methods.

5.23.1 No-Build Alternative

Under the No-Build Alternative, no potential for joint developments exists.

5.23.2 Selected Alternative

At the time of the preparation of this FEIS no private developers have expressed interest in a joint development process in the study area. Opportunities for joint development could result from the need to relocate residential and commercial uses. Some large areas of existing ROW no longer needed for transportation purposes

and/or remainders of parcels acquired to provide additional ROW could become available for use by the private sector or for local public facilities.

5.24 Cumulative and Indirect Impacts

Cumulative impact is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR 1508.7).

Indirect impacts are "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems."(40 CFR 1508.8)

The analysis of cumulative and indirect effects is in accordance with CEQ and FHWA guidance. In particular, the CEQ's June 24, 2005 "Guidance on the Consideration of Past Actions in Cumulative Effects Analysis" was followed.

5.24.1 Cumulative Impacts

Issues of significance for cumulative effects analysis are economic development, transportation, wetlands and floodplains. The relevance of these issues lies in the potential effect of I-49 South upon them as presented in this FEIS in the context of the regionally significant effects of other past, present and reasonably foreseeable actions upon them.

5.24.1.1 No-Build Alternative

As presented in Chapter 3 of this FEIS, traffic congestion and delay are expected to increase in severity and geographic extent in the future, commensurate with reasonably foreseeable development. The No-Build Alternative would be unresponsive to current and increasing demands for highway capacity, safety and hurricane evacuation. The No-Build Alternative would have no effect on wetland and floodplain impact trends.

5.24.1.2 Selected Alternative

Economic Development

Development in the study area has occurred in a suburban pattern typical of the second half of the 20th century and the early 21st century. Many residents living in and near the study area work in New Orleans or in the surrounding suburbs. Review of development plans and projects pending local approval indicates that the suburban growth trend is occurring and will continue to occur and be encouraged.

As presented in Section 1.3.5, past and current growth of Louisiana port activities and the oil and gas industries, as well as demographic growth and tourism activities has placed demands on the transportation infrastructure. Foreseeable future economic development is expected to increase demands on transportation infrastructure between now and 2030.

Growth has occurred and will continue to occur irrespective of the capacity of transportation infrastructure. Transportation infrastructure improvements are largely reactive; i.e., roadway improvements occur in response to observed demand. According to the Jefferson Parish's *Transportation Improvement Program for Fiscal Years 2004-2006*, 70 transportation improvement projects are scheduled in Jefferson Parish through 2009. Other local transportation improvement projects are proposed by the *Year 2025 Metropolitan Transportation Plan for the New Orleans Region* (RPC 2001) and the Transportation Element of *Envision Jefferson 2020* (Jefferson Parish Government and RPC 2002). I-49 South is also a reactive transportation project as outlined in the Purpose and Need. It is being undertaken to address existing and foreseeable future demand and its attendant issues of safety and hurricane evacuation.

I-49 South is not anticipated to induce or proactively cause growth in the area as the momentum of development is already in place in response to existing infrastructure. As presented in Sections 1.4.1 and 1.4.2, the long range regional plans for Jefferson and St. Charles Parishes, for example, cite the vital need to address short-term and long-term transportation infrastructure needs to respond effectively to anticipated growth and quality of life. I-49 South is expected to do that and have no more of an effect on where, what type and how much development occurs in the area than does US 90 and other existing roadways because transportation connections and access essentially will be unchanged by the project.

The cumulative effect of I-49 South in the context of other past, present and foreseeable development is to mitigate many transportation issues caused by development. It will address capacity, safety and hurricane issues, some of which will only occur once the currently proposed development projects are in place.

Transportation

From a transportation perspective, I-49 South will be part of a highway transportation network that funnels traffic into the New Orleans metropolitan area and into its central area and back out to the suburbs and beyond. In this capacity, work commuting, trips for daily needs and the beginning of a hurricane evacuation route are handled by the regional network. Upgrading US 90 to interstate status will improve highway transportation connections on this corridor in each of these capacities. On a larger geographic scale, this project is the final section of I-49 to be upgraded. Cumulatively, the entire I-49 as an interstate connection between New Orleans and Shreveport will benefit the regional transportation network as a through highway and improved hurricane evacuation route.

Within the study area, local transportation patterns will be preserved, and some existing and foreseeable operational problems will be addressed. I-49 is not anticipated to create a demand for additional roadway infrastructure because pre-existing US 90 did not and because I-49 South will serve a similar function to that of US 90 locally. Where I-49 departs the US 90 ROW, the potential for development along and near the alignment is low because of existing, regulated wetlands.

Wetlands

Agricultural and suburban development in the study area has converted and continues to convert wetlands by means of drainage, levee systems and filling. These practices have reduced the total area of wetlands and changed the characteristics of some wetlands over the years. In their report, *Coast 2050: Toward a Sustainable Coastal Louisiana*, the Louisiana Coastal Wetlands Conservation and Restoration Task Force and Wetlands Conservation and Restoration Authority estimate that of the 569,860 acres of marsh and swamp in the Barataria Basin in 1990, approximately 30% or 172,660 acres is expected to be lost by 2050 due to natural and manmade causes.

I-49 would be located within the US 90 ROW to the maximum extent possible to avoid environmental impacts including those to wetlands. Unavoidable wetland impacts will occur primarily where I-49 departs from the US 90 ROW. The loss of wetlands in new ROW would be minimal in comparison to the wetland losses resulting from land development elsewhere in the study area.

Unlike most past roadway development in the area, however, the DOTD will be obligated to provide replacement wetlands to offset the unavoidable impacts of I-49 South. DOTD proposes to purchase mitigation bank credits in the study area, thereby contributing to the restoration of wetlands ecology in the watershed and project area. Over the long-term, mitigation will ensure no additive loss of wetlands due to I-49 South in the context of past, present and reasonably foreseeable development.

As indicated previously, I-49 South is not anticipated to induce development in new alignment areas because of existing, regulated wetlands.

Floodplains

As with wetlands, much of the suburban development in the study area and environs has occurred and will continue to occur within 100-year floodplains. Development in floodplains reduces the geographic area within which flood waters can be safely contained and subjects property and people in those floodplains to potential risks.

In this context, the mainline of I-49 South would be constructed as an elevated highway throughout the study area. The elevated structure will keep through traffic above the floodplains and enable normal and floodwater hydrologic patterns to persist. I-49 South would not add to past, present and reasonably foreseeable flooding problems. In fact, routing through traffic on elevated I-49 South would eliminate some existing flooding problems along US 90 as described in Section 4.8.

As previously stated, I-49 South is not anticipated to induce development; therefore, I-49 South will not have an additive effect on the degradation of floodplains.

5.24.2 Indirect Impacts

Issues of significance for indirect effects analysis are economic development and ecological effects. Their relevance lies in the potential direct effects of I-49 upon them.

5.24.2.1 No-Build Alternative

The No-Build Alternative would be a "do-nothing" alternative. Indirect development, alternative transportation infrastructure projects, or effects on wetlands and floodplains are not anticipated to occur as a result of the No-Build Alternative.

5.24.2.2 Selected Alternative

Economic Development

A qualitative assessment of the potential of I-49 South to have unavoidable indirect impacts on economic development was undertaken. This assessment examined the potential for induced development, and effects on forecasted growth and land development trends.

I-49 South may attract localized commercial development at proposed interchanges. Services supporting highway travelers such as gas service stations and restaurants are likely. However, this indirect effect is anticipated to be similar to that of existing US 90 and other existing roadways because transportation connections and access will be essentially unchanged by the project. As development in wetlands and floodplains is constrained and the focus of development is in areas of fastland, the effect on localized development on these resources is anticipated to be minimal.

Development trends in the communities surrounding the project corridor are affected primarily by public policy which encourages new development as a mechanism for economic growth and prosperity. As previously indicated, transportation infrastructure is essentially reactive to development and public policy regarding development. This observation is supported by regional planning efforts described in Section 1.4 that focus on responding to growth-induced demands on transportation infrastructure. As a result, while I-49 will provide transportation benefits, those benefits will chiefly address existing and anticipated congestion and safety issues. Therefore, it is unlikely that I-49 South would alter or influence development trends.

Ecological Effects

A qualitative assessment of the potential of I-49 South to have unavoidable indirect ecological impacts was undertaken. This assessment examined the potential for habitat fragmentation, and ecological alteration in terms of hydrology, wildlife movements and overall ecosystem functions.

Unavoidable direct ecological impacts of I-49 South are described in foregoing sections of this EIS, such as impacts on wetlands, floodplains and naturally vegetated environments. A linear transportation project can cause habitat fragmentation when a new corridor crosses a land area, effectively breaking it up into smaller parcels that become isolated from one another. Fragmentation can affect biological diversity as a roadway can function as a barrier between the parcels. Fragmentation can change the total population and diversity of species that can be supported by the remaining smaller parcels compared to the former whole. Fragmentation can also change natural processes such as hydrology, wildlife mobility, and vegetation make-up.

The alignment of the Selected Alternative would be primarily within the US 90 ROW, but would divert to a new alignment in some areas. No new habitat fragmentation would result from the alignment within the US 90 ROW. Where new

alignment is proposed, the potential for habitat fragmentation exists. In particular, less than 1 mile of the Link 3 alignment would cross bottomland hardwoods and cypress tupelo swamp near Paradis and would isolate a small piece of the extensive swamp on the north side of the alignment. Consistent with the goals of Louisiana's *Comprehensive Master Plan for a Sustainable Coast* described in Section 1.4.3, the indirect effect of fragmentation would be offset to a large degree by the proposal to elevate the roadway. Elevation of the roadway will enable the natural hydrology to be preserved between the two areas, as well as passage for wildlife beneath the structures. In other areas of proposed new alignment, the elevated roadway would traverse agricultural land and the Paradis Mitigation Bank site, both of which have been determined to have low habitat quality. Habitat fragmentation of these areas is not a substantial concern.

5.25 Changes in Transportation Patterns

5.25.1 Vehicular Access to Businesses and Residences

5.25.1.1 No-Build Alternative

The No-Build Alternative would not result in changes in vehicular access to businesses and residences.

5.25.1.2 Selected Alternative

From the statewide and regional perspectives, I-49 South would create an interstate route on the Westbank of the Mississippi River that would serve as an alternate route for traffic that currently travels westbound through New Orleans on I-10.

At the local level, in addition to the specific Parish conditions discussed below, the principal changes would result from the placement of Control of Access along the frontage roads at entrance and exit ramp terminals and at connecting road intersections for varying distances on both the frontage road and the connecting road.

In Lafourche Parish, the Selected Alternative would eliminate direct access from LA 308 to US 90. Local traffic between US 90 and LA 308 would be routed on LA 182 or on I-49 to the LA 182 interchange.

In St. Charles Parish, the Selected Alternative would not affect vehicular access to existing businesses or residences. The removal of control of access from a portion of LA 3127 between the proposed I-49 interchange and the I-310 interchange would allow the developers of the Ashton Plantation subdivision and other landowners along the eastside of LA 3127 to seek DOTD and 404 permits to build roadways providing access and egress to their properties from LA 3127.

The ramps at LA 306 requested by St. Charles Parish were not justified by traffic projections and are not needed to meet the Purpose and Need of this project. If ramps can be justified at a later date, a separate NEPA document would be required.

Traffic patterns would change by routing through traffic away from US 90 in the urbanized area of St. Charles Parish between LA 635 and Willowdale Boulevard.

If a separate NEPA document is completed for the relocation of LA 3060, and if it includes a connection to proposed I-49, this FEIS would be supplemented to provide

for the connection.

In Jefferson Parish, the general traffic patterns would continue, but through traffic would be removed from the at-grade portions of US 90.

5.25.2 Hurricane Evacuation

5.25.2.1 No-Build Alternative

The No-Build Alternative would involve no new construction, and no changes in evacuation patterns would be anticipated.

5.25.2.2 Selected Alternative

The Selected Alternative would improve evacuation by providing a continuous elevated roadway capable of being adapted to the use of contraflow lanes.

5.26 Relationship between Short-term Uses and Long-term Productivity

5.26.1 No-Build Alternative

The No-Build Alternative would involve no new short-term impacts and there would be no use of resources except as required for routine maintenance of existing US 90.

5.26.2 Selected Alternative

I-49 South is the product of federal, state, and regional planning efforts that considered existing and future traffic needs. These planning considerations recognized the potential for short-term project impacts at the local level and the concurrent commitment of human resources and materials. These potential impacts to the natural and human environment, and strategies to mitigate adverse impacts, are identified within this FEIS. Local short-term impacts and project use of resources were found to be reasonable in the context of the overall project scope and primary goal to maintain and enhance long-term regional productivity.

5.27 Irreversible and Irretrievable Commitment of Resources

5.27.1 No-Build Alternative

The No-Build Alternative would involve no roadway construction. The commitment of resources would be limited to that which is already accounted for in the US 90 maintenance program.

5.27.2 Selected Alternative

Construction of I-49 South would require a commitment of land, labor, natural resources, and financial resources. Land acquisition would be an irreversible commitment to the project for the life of the highway. The project would adhere to federal and state property acquisition requirements to ensure appropriate compensation of affected landowners.

Labor, materials, and equipment fuels used to construct the project would be considered irretrievable resources. The selection and use of these resources would not have an adverse effect on the continued availability of these resources.

Project funding commitments from federal and state sources would account for both facility construction and maintenance needs. Expenditure of construction monies is considered an irretrievable commitment. Funding commitments would not be available for other use.

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